

REMARKS

(A) STATUS OF THE APPLICATION

Applicants thank the Examiner for his explanation of the rejections in the Non-Final Office Action dated December 19, 2005.

(I) DISPOSITION OF CLAIMS

- (i) Claims 1-10 are pending in the application.
- (ii) Claims 1-10 are provisionally rejected under the judicially-created doctrine of non-statutory obviousness-type double-patenting.
- (iii) Claims 1, 2, 4, 5, 7, 8, and 10 are rejected under 35 U.S.C. § 102(b).
- (iv) Claims 1-10 are rejected under 35 U.S.C. § 103(a).

(II) APPLICANTS' ACTION

- (i) Applicants have filed terminal disclaimers.
- (ii) Applicants have amended Claim 1.
- (iii) Applicants have canceled Claims 2-3, 5-6, and 8-9.
- (iii) Applicants point out the unexpected results of their compositions through an affidavit from the first-named inventor. The affidavit forms part of response to the Office Action.

(B) RESPONSE TO REJECTION UNDER OBVIOUSNESS-TYPE DOUBLE PATENTING

(I) U.S. PATENT APPLICATION NO. 10/925,843

Claims 1-10 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-7 of co-pending U.S. Patent Application No. 10/925,843 (*hereinafter* "'843 patent application").

The Examiner asserts that although the conflicting claims are not identical, they are not patentably distinct from each other because practicing one invention would infringe on the other invention.

A Terminal Disclaimer is being filed herewith under 37 C.F.R. § 1.321(c). In accordance with 37 C.F.R. § 1.321(b)(1)(iv), the Terminal Disclaimer to the '843

patent application is signed by Mr. Hilmar Fricke, Esq., who is an attorney of record for E. I. du Pont de Nemours & Co. of 1007 Market Street, Wilmington, DE. Further, the present application and the '843 patent application were owned by E. I. du Pont de Nemours and Company, at the time of the invention of the present application.

Applicants therefore believe that the double patenting rejection has been overcome through the filing of the Terminal Disclaimer to the '843 patent application.

(II) U.S. PATENT APPLICATION NO. 10/963,907

Claims 1-10 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-12 of co-pending U.S. Patent Application No. 10/963,907 (*hereinafter* "907 patent application").

The Examiner asserts that although the conflicting claims are not identical, they are not patentably distinct from each other because practicing one invention would infringe on the other invention.

A Terminal Disclaimer is being filed herewith under 37 C.F.R. § 1.321(c). In accordance with 37 C.F.R. § 1.321(b)(1)(iv), the Terminal Disclaimer to the '907 patent application is signed by Mr. Hilmar Fricke, Esq., who is an attorney of record for E. I. du Pont de Nemours & Co. of 1007 Market Street, Wilmington, DE. Further, the present application and the '907 patent application were owned by E. I. du Pont de Nemours and Company, at the time of the invention of the present application.

Applicants therefore believe that the double patenting rejection has been overcome through the filing of the Terminal Disclaimer to the '907 patent application.

(C) RESPONSE TO REJECTION UNDER 35 U.S.C. § 102(B)

Applicants respond to Examiner's rejection of claims in the present patent application, below.

(I) CLAIMS 1-2, 4-5, 7-8 & 10-WO 01/25359 (U.S. PAT. 6,825,241) TO BLUM, ET AL.

Claims 1-2, 4-5, 7-8 and 10 have been rejected under 35 U.S.C. § 102(b) as anticipated by WO 01/25359 (which corresponds to U.S. Patent 6,825,241), to Blum, *et al.* (*hereinafter* "Blum"). According to the Examiner, Blum discloses polyurethane diacrylates and powder coatings derived from the polyurethane diacrylates, wherein

polyurethane diacrylates are produced from the reaction of hexane diisocyanate with ethylene glycol, butanediol, and hydroxyethyl acrylate in a molar ratio that meets the claimed range.

In response, Applicants have amended Claim 1 to incorporate limitations of Claim 3. Applicants have canceled Claims 2-3, 5-6, and 8-9.

Applicants respectfully submit that, as a result, the anticipation rejection under 35 U.S.C. 102(b) has been overcome.

(D) RESPONSE TO REJECTION UNDER 35 U.S.C. § 103(A)

Applicants respond to Examiner's rejection of claims in the present patent application, below.

(I) CLAIMS 1-10-WO 01/25359 (U.S.PAT. 6,825,241) TO BLUM, ET AL.

Claims 1-10 have been rejected under 35 U.S.C. § 103(a) as unpatentable over WO 01/25359 (which corresponds to U.S. Patent 6,825,241), to Blum, *et al.* (*hereinafter* "Blum"), as obvious.

Specifically, the Examiner states that Blum discloses polyurethane diacrylates and powder coatings derived from the polyurethane diacrylates, wherein the polyurethane diacrylates are produced from the reaction of hexane diisocyanate with ethylene glycol, butanediol, and hydroxyethyl acrylate in a claimed molar ratio range.

The Examiner further argues that although other mixtures of diols are not exemplified that specifically meet those claimed, the reference does disclose the use of other diol species that meet those claimed. Since, according to the Examiner, the diols of the exemplified blend are included within the listing of diols, this listing essentially establishes the equivalency of the disclosed other diol species to those of the example. Accordingly, it would have been *prima facie* obvious to utilize any of the disclosed diols in the form of blends in the production of polyurethane diacrylates, in accordance with the teachings of the example.

Applicants respectfully disagree with the Examiner's conclusion of obviousness.

According to the MPEP § 2141, under the Graham Factual Inquiry Test,¹ the four fundamental factual inquiries enunciated for determining obviousness are as follows:

- (1) Determining the scope and contents of the prior art;
- (2) Ascertaining the differences between the prior art and the claims in issue;
- (3) Resolving the level of ordinary skill in the pertinent art;
and
- (4) Evaluating evidence of secondary considerations.

Evidence of secondary considerations must be taken into account by the Examiner before concluding obviousness. Factors considered as evidence of secondary considerations include: commercial success; long-felt but unresolved need; failure of others; recognition of problem; failed attempts to solve problem; teaching away by those skilled; unexpected results and superior properties (surprising result); etc.

Applicants respectfully submit additional evidence of unexpected results and superior properties demonstrated by the compositions of the present invention. Particularly, the compositions of the present invention demonstrate an unexpected, surprising result, and superior result in terms of the improvement in acid resistance and scratch resistance of the powder coatings formulated from the compositions of the present invention.

Applicants have submitted this additional evidence by way of an affidavit under 37 C.F.R. § 132 ("132 declaration") by the first named inventor Ms. Carmen Flosbach. This affidavit is attached along with the present response.

The details of the experimental work, data and analysis are provided in the affidavit are also summarized below for discussion purposes.

(a) Acid Resistance and Scratch Resistance of Powder Coatings

Acid and the scratch resistance of the powder coatings of Examples 1-to 8 and Example 11 of the present application were determined. The respective powder clear coats were sprayed, in a layer thickness of 80µm in each case, onto steel sheets coated with commercially available electro-deposition paint, filler and base

¹ Graham v. John Deere, 383 U.S. 1, (1966).

coat (flashed off) and melted for 10 min at 140°C (oven temperature). The coating was cured by ultra-violet radiation corresponding to a radiation intensity of 500 mW/cm² and a radiation dose of 800 mJ/cm².

(i) Acid Resistance Test

50 µl of 36% sulfuric acid were dropped onto the paint films for 30 minutes, at intervals of one minute, at 65°C.

Assessment: Destruction of the film after X (0 to 30) minutes.

(ii) Scratch Resistance Test

Scratch resistance was determined in terms of residual gloss after wash scratching. Residual gloss was measured in percent (ratio of initial gloss of the clear coat surface to its gloss after wash scratching; gloss measurement in each case was performed at an angle of illumination of 20°). Wash-scratching was performed using an Amtec Kistler laboratory car wash system [c.f. Th. Klimmasch and Th. Engbert, Entwicklung einer einheitlichen Laborprüfmethode für die Beurteilung der Waschstraßenbeständigkeit von Automobil-Decklacken] according to development of a standard laboratory test method for evaluating resistance of automotive top coats to car wash systems.²

For comparison purposes, Applicants also prepared the resin according to Example 5 of WO 01/25359. Using this resin, a powder coating was prepared and applied according to the method used for Examples 1-11. Acid and the Scratch resistance were determined as described above. Acceptable Acid Resistance number was greater than 10. Acceptable Scratch Resistance number was greater than 60.

Example No.	Acid Resistance	Scratch Resistance (residual gloss, %)
1	12	72
2	13	68
3	11	71
4	12	69
5	23	64
6	21	70

² See DFO proceedings 32, pages 59 to 66, technology seminars, proceedings of the seminar on 29-30.4.97 in Cologne, published by Deutsche Forschungsgesellschaft für Oberflächenbehandlung e.V., Adersstraße 94, 40215 Düsseldorf.

7 (comparison)	10	75
8 (comparison)	22	60
11	13	82
Example 5 of WO '359 (comparison)	9	75

As can be seen from the table, acceptable acid and scratch resistance results were obtained only in case of Examples 1-6 and 11. The comparative examples show either poor acid resistance (values of ≤ 10) or poor scratch resistance (values of ≤ 60). Particularly, Example 5 of Blum showed a poor Acid Resistance number of "9".

Applicants respectfully submit that by way of additional data provided above, they have successfully rebutted the Examiner's assertion of prima facie case of obviousness.

Therefore, the rejections to the claims in question should be withdrawn and the claims be allowed.

CONCLUSION

In view of the above remarks, Applicants respectfully submit that stated grounds of rejection have been properly traversed, accommodated, or rendered moot and that a complete response has been made to the Non-Final Office Action mailed on December 19, 2005.


Therefore, Applicants believe that the application stands in condition for allowance with withdrawal of all grounds of rejection. A Notice of Allowance is respectfully solicited. If the Examiner has questions regarding the application or the contents of this response, the Examiner is invited to contact the undersigned at the number provided.

Should there be a fee due which is not accounted for, please charge such fee to Deposit Account No. 04-1928.

Respectfully Submitted,

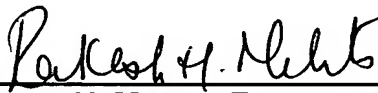
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